

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Reilly, et. al.

Group Art Unit: 1794

Serial No.: 10/776,884

Examiner: FERGUSON, Lawrence D

Filed : February 11, 2004

Confirmation # 3393

For: ARTICLE DISPLAYING EDGEWISE, ANGULAR MULTI-CHROMATIC
CHARACTERISTICS AND METHODS OF USE THEREOF

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Pre-Appeal Brief Request for Review accompanies our Notice of Appeal and fee, in reply to the Final Rejection dated November 10, 2008, and subsequent Advisory Action dated January 21, 2009.

The Advisory Action set a period for reply of 4 months from the mailing date of the final rejection, or March 10, 2009. This Notice of Appeal and Pre-Appeal Brief Request For Review is being filed on March 10, 2009, within the period set for reply.

Attached are Applicant's arguments for which review is being requested.

Issues

Are claims 1-30, 32 and 35 obvious under 35 U.S.C. §103 over Kito et al (U.S. 5,585,425)? Specifically, there are two key points in which Applicant respectfully disagrees with the Examiner, and on which Applicant is asking for Review:

1. Is the layer thickness of Kito “optimizable” to overlap Applicant’s claims?
2. Is Applicant’s created angular multichromatic effect an “inherent property” of the Kito article?

Background

Applicant has created a multi-layer article (acrylic sheet that can be formed into articles) in which the color of the edge of the article is different than that of the principle colors – creating a stunning color changing effect depending on the angle at which the edge is viewed that “will catch the consumer’s eye”, according to the product literature. The color change is due solely to the viewing angle (an angular multichromatic effect). The product is commercially successful (a Deere factor), sold as Plexiglas® Edge FX™. Several samples of the commercial product were put into the record during Applicant’s July 19, 2007 interview with the Examiner.

The cited art, Kito et al (U.S. 5,585,425), is to a thermochromatic opaque/transparent composition coating, being transparent at high temperatures and colored opaque at lower temperatures. The coating is used on toy cars to change color or reveal interior features when placed under hot water. My son used to have several of these color-change cars and at one point they came as prizes in cereal boxes.

A. The Kito reference teaches:

- a) a thin coating that is generally 2 to 100 microns thick (Col. 12, line 21)
- b) the thin coating reversibly changes from opaque to transparent based on temperature (thermochromatic trigger) (Col. 12, lines 46-54)

B. Applicant claims:

- a) a multi-layer article in which each layer is from greater than 0.1 to 100 mm thick, and the light-transmitting layer is 1 to 100 mm thick.
- b) An angular multichromatic effect, in which the layers do not change color, but the edge appears to change color solely based on the viewing angle.

Issue 1: Is the layer thickness of Kito “optimizable” to overlap Applicant’s claims?

Kito claims a layer thickness of generally 2 to 100 microns thick (Col. 12, line 21), while Applicant claims each layer is from greater than 0.1 to 100 mm thick, and the light-transmitting layer is 1 to 100 mm thick.

“Generally”: The Examiner contends that the Kito reference “does not teach that the thickness cannot be higher than what is generally taught” and that “absent a showing of critical results it would have been obvious to one of ordinary skill to adjust the thickness higher to improve strength and durability”.

“Optimizable”: The Examiner maintains that thickness is optimizable, and therefore it would have been obvious to optimize for durability. Applicant respectfully disagrees – since the cited Kito reference teaches exactly the opposite. The Kito reference teaches a thermochromic thin coating (Col. 11, lines 57-63), and there are several reasons the coating must be thin (besides the obvious cost savings):

- a) The Kito coating must be thin in order to uniformly apply the coating solution (Col. 12, line 25) by spray coating, screen printing, gravure printing, roller coating.
 - b) The Kito reference requires a coating that must dry quickly during manufacture, (Col. 11, lines 57-63).
 - c) The only optimization taught by the Kito reference is the 15-20 micron coating thicknesses taught by all the examples – teaching away from Applicant’s claims..
- The Kito reference not only sets a practical maximum of 100 microns, it teaches and suggests only optimized thicknesses much lower (15-20 microns). A thickness in a region outside that taught by the reference cannot be “optimized” outside that range. One cannot “optimize” the Kito coating outside the limits taught by Kito, based on Kito. Applicant’s layer range is outside the Kito limits.

Issue 2: Is Applicant's created angular multichromatic effect an "inherent property" of the Kito article? Applicants claim an article having at least one edge exposing at least one light transmitting layer, wherein the observed color of said at least one exposed light transmitting layer, when viewed along said edge, appears different than its principal color (shows angular multichromatic characteristics) solely due to the viewing angle,

"solely" – This is the only point that needs to be argued – since it clearly differentiates Applicant's claims from anything taught or suggested by the Tito reference. Tito requires a thermochromatic effect (a thermo chemical reaction), clearly teaching the opposite of Applicant's claims that the color change is due solely to the viewing angle.

The teaching of Kito's thermochromatic effect DOES NOT teach or suggest Applicant's angular multichromatic effect SOLELY based on viewing angle – but clearly teaches the opposite (i.e. Not Solely). The teaching of a different chromatic effect teaches away from Applicant's sole chromatic effect.

The Examiner had contended that Applicant's claims have "comprising" language, and therefore Applicant's multichromatic effect is merely one of many possible chromatic effects. Besides being an improper reading of the claim language (Applicant notes that the "wherein" comes after the body of the main claim, in the part of the claim generally referred to as the qualifying phrases; and refers back to the whole article before the transitional phrase, and therefore not related to the "comprising language") - Applicant further amended the claim to ass the "solely" language for even more clarity.

While Kito unquestionably does not teach or suggest Applicant's "solely" chromatic effect, there are also notable other differences.

a) Applicant agrees with the Examiner's statement on page 8, lines 1-3 of the April 30, 2008 office action "Kito does not recognize Applicant's angular multichromatic characteristics".

b) "edge". To have Applicant's claimed edge effect, one needs an edge of sufficient width to see the effect. That is why Applicant claims at least one light transmitting layer having a thickness of 1 to 100 mm. The Kito coating layer at a maximum of 100 microns is no where close to Applicant's claimed minimum of 1 mm.

The Kito substrate is covered by the thermochromatic coating, and therefore does not have an exposed "edge". The color change in Kito is seen on the broad side of the article – not on an edge.

c) "Apparent color change": Applicant claims an observed color change on the edge different from the primary color(s). Applicant's primary colors of the layers do not change – they only appear to change colors when viewed on an angle along the edge. The colors seen in the Kito reference **are** the primary colors - not different than the primary color.

The Kito reference requires an actual change, due to a thermo-chemical effect, involving a change in matter. Applicant's color change involves no change in matter, but is a created optical effect with the appearance changing related to viewing angle.

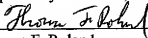
Conclusion

Applicant believes the following have been shown:

1. The Kito teaching of a thermochromatic effect cannot teach or suggest Applicant's claimed "solely" angular multichromatic effect, and clearly teaches away from it. **This by itself makes Applicant's claims unobvious over the cited art.**
2. Applicant's claimed layer thickness of greater than 0.1 mm (100 microns) can not be obtained by optimization of the Kito teaching of 2 to 100 microns, based on the Kito teachings for a thinner layer, including all examples at 15-20 microns.
3. The Kito reference does not teach or suggest Applicant's solely angular multichromatic effect, since Kito teaches or suggests no transparent "edge" of over 1 mm in thickness, and the Kito material has an actual principal color change while Applicant claims an observed color change without a actual principle color change.

Applicant believes the reasons for rejection have been overcome, and the claims should be allowable to the Applicant. Reconsideration and allowance are requested.

Respectfully submitted,


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Date: March 10, 2009